SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

Accredited by NAAC-UGC with ‘A’ Grade

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

COURSE NAME: 19OE116 - PRODUCT DESIGN AND DEVELOPMENT

III YEAR / VI SEMESTER

Unit 1 - INTRODUCTION

Topic 6 – Designing to Codes and Standards

Designing to codes and standards is a critical practice in engineering, architecture, manufacturing, and many other fields.

Codes and standards are established guidelines that ensure products, systems, and structures meet safety, functionality, and quality requirements.

Adhering to these codes and standards not only helps ensure legal compliance but also promotes reliability, safety, efficiency, and sustainability in the final product or structure.

- **Codes: These are regulations or laws that mandate specific requirements for design, construction, and safety. They are typically enforced by government agencies and are legally binding. Examples include building codes, electrical codes, and fire safety codes.**
- **Standards: These are agreed-upon guidelines, best practices, or technical specifications developed by recognized organizations, such as the American National Standards Institute (ANSI), International Organization for Standardization (ISO), or the Institute of Electrical and Electronics Engineers (IEEE). Standards are usually voluntary but are widely adopted to ensure uniformity and quality.**

Importance of Designing to Codes and Standards

a. Safety and Risk Management

b. Legal Compliance

c. Consistency and Quality Assurance

d. Cost-Effectiveness

e. Environmental Impact and Sustainability

Types of Codes and Standards

a. Building Codes

b. Electrical Codes

c. Environmental Codes and Standards

d. Mechanical and Structural Standards

e. Safety Standards

f. Product Design Standards

The Role of Designers in Adhering to Codes and Standards

a. Research and Understanding

b. Integration into Design

c. Testing and Validation

d. Documentation and Certification

e. Collaboration with Other Professionals

Challenges in Designing to Codes and Standards

a. Complexity
b. Cost
c. Regional Variability
d. Innovation vs. Compliance

Designing to codes and standards is an essential aspect of ensuring that products, systems, and structures are safe, functional, and legally compliant.

Codes and standards provide frameworks that promote quality, safety, environmental sustainability, and efficiency.

Designers play a key role in incorporating these standards into their designs to meet regulatory requirements, reduce risk, and ensure customer satisfaction.

Thank You...